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DEVELOPING A COMMON EUROPEAN APPROACH TO COMMUNICATIONS

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Internal European Market

We have a common objective, an objective for Europe: the completion of the Internal European Market by 1992.

- The Federal Republic of Germany strongly supports the Internal European Market.

- The Federal Republic of Germany supports an Internal Market in which the free movement of persons, 'goods, services and capital is the rule.

- The Federal Republic of Germany supports a competitive Internal Market in which liberalisation and harmonisation can be implemented jointly.

- The Federal Republic of Germany also strongly supports free and open world trade and the principle of a social market economy.

We are convinced that only this economic system is suited to achieve equal opportunities, property, prosperity and social advance for everyone. International experience has shown in the past that such an economic system is superior to every other - such as a planned or a centrally regulated economy.

A market economy will only work however if competition is dynamic on all markets. It is in particular in Europe with its highly developed national economy that competition is required as a means of maintaining and strengthening the basis of its economic success in the future, too.

There is no denying the fact that we will have to struggle for the basic issue of liberalisation when solving concrete problems as we are faced with a development which has led to a multitude of regulatory state measures in the markets over the years. This existing market regulation that developed in the past must be changed as the present time requires and regulation only kept where it is useful and warranted.

Only by doing this will new promising markets be promoted and economic growth accelerated not only on these markets but everywhere.

With such a policy we are on the right path, for the experience gained during this century tells us that:

An economic system is the more successful the less regulatory restrictions are imposed by the state and the more freedom is given to the individual.

Internal Market for Telecommunications

A basic part of the Internal European Market is the Internal Market for telecommunications.

For telecommunications is of particular importance to the Internal European Market in three ways:

Firstly, telecommunications plays a significant role in the liberalisation of trade, capital and above all service transactions due to its special importance for the infrastructure.

Secondly, telecommunications itself is an economic factor of progressing rising importance; on this, the Green Paper on telecommunications has the following to say:

- Nearly 3% of the gross domestic product of the Community results from telecommunications today. Assuming optimum development, this figure could increase to up to 7% by the end of the century and telecommunications could thus exceed the largest sector at present, the automobile industry.

- By the year 2000 investments in the region of DM 1,000 billion will be made in the Community in the telecommunications sector.

Thirdly, along with the information technology sector telecommunications will have a major impact on jobs. By the end of the century - that is to say in less than 10 years' time - the competitiveness of up to 60 million jobs in the Community will depend to a greater or lesser extent on telecommunications and information technology. In the past few years employment in the telecommunications sector has increased despite liberalisation and will continue to do so due to the new chances and opportunities resulting from liberalisation.

Ladies and gentlemen, we are now required to set the course for the economic and political development in Europe in the decade to come. The positions that are now defined in the key sector of telecommunications will largely determine technological and industrial development in Europe.

Completion of the Internal Market for Telecommunication Services

A basic part of this development is the completion of the Internal Market for telecommunication services, too.

Good and efficient communications will be the central nervous system of tomorrow's information society. European policy must therefore be based on the creation of a frontier-crossing market for telecommunication services and facilities.

This implies the development of a modern and compatible telecommunications infrastructure in all countries of the Community.

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Open telecommunication facilities are another indispensable prerequisite for us to overcome the present national borders and to bring people in the Community closer together. However, they also have an important influence on the development of future trading relations within the Community and with its outside partners.

In particular the prospects for the service sector as a whole must be considered. Already today services account for nearly two thirds of the production and employment in the Community. There is every reason to believe that the local provision of services will continue to decrease compared to today, and that services will develop more and more into a commodity.

A free and innovative market for telecommunication services will thus be an essential element of European integration and as a distribution system for information and electronic services, one of the backbones of economic activity in the Community.

Principles of action for the European Community

The principles of action underlying the development of a common European approach to communications as derived from the above prospects aim at opening national telecommunications markets and lifting regulatory and institutional restrictions in telecommunications.

The common positions and action lines proposed by the EC Commission in the Green Paper reflect this clearly.

Special importance is attached in it to a liberal regulatory policy and to a compatible market-oriented services strategy for all Member States. In this way services can be developed rapidly and private initiative fully utilised.

Regulatory policy

The aim of such a regulatory policy is a competitive telecommunications market open in its external relations; however, wherever necessary and justified, exceptions to the rule should be possible.

In particular these exceptions are at present the subject of highly controversial discussions. The issues being discussed are

● the Directive of the Commission on competition in the field of telecommunication services giving much scope - and let me say, too much scope for many Member States - to private providers

● the proposal for a framework Council Directive on Open Network Provision (ONP) securing open access for private providers to network resources and telecommunication services, access, however, which in the opinion of some Member States is overregulated.

What is the attitude of the Federal Republic of Germany on these questions?

A few pronouncements on the **Restructuring of telecommunications in Germany (excluding however the mandatory services)**

As you see, the new legislation in the Federal Republic of Germany is based on competition being the rule and state monopolies and restrictive regulation being the exceptions that should be accepted only on justified grounds. This is in complete accord with the objectives of the Green Paper on telecommunications.

This liberal approach is secured by a concept which I should like to call the "reserved power" of the national regulatory authority, whereby with the federal structure of our country the states or laender, as well as parliament, also have a decisive right to be heard.

● If the free market forces fail to provide the infrastructure considered necessary to render services nationwide, securing coverage and availability, making available tariff structures and, for instance, internationally standardised technical interfaces, the national regulatory authority will close the relevant infrastructure gaps via the public enterprise Deutsche Bundespost TELEKOM.

● These special conditions are referred to as mandatory services of Deutsche Bundespost TELEKOM. However, I do want to emphasise that the free unregulated competition of private providers will not be affected by the definition of a mandatory service. Any imbalance of the burden that might arise for Deutsche Bundespost TELEKOM will be accepted, especially as this enterprise has privileged revenue through the telephone service monopoly.

● Only if it is established that, due to the imbalanced burden, the financial viability of Deutsche Bundespost TELEKOM is endangered, the regulatory authority can restore the balance by imposing comparable restrictions on the major service providers.

Ladies and gentlemen, by implementing our restructuring system we have come very close to European objectives. On the one hand we have secured the existing infrastructure and its future development, on the other we have opened the market for all telecommunication services except the telephone service to any competitor on a secure legal basis and without any telecommunications law restrictions.

I am sure you will understand that our liberal approach also marks our position in the Community. We regard the Green Paper approach, the principle and basic details of which the Council confirmed on 30 June 1988, as the concept that should be applied in the Community. In concrete terms, this approach finds expression in the Directive of the Commission on competition in the field of telecommunication services, the content of which we wholeheartedly support.

Such a regulatory policy will create the prerequisites for a positive development in telecommunications as mentioned earlier along with positive effects on the Community's development as a whole.

First Résumé: Consensus has already been achieved to a large extent.

Ladies and gentlemen, at this point let me summarise what has already been achieved so far in the development of a common European approach to communications:

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- We have reached agreement on the network infrastructure; the aim is network integrity as a basic element of a common market for telecommunication services.

- We agree that the telephone service is a justified exception to the rule of competition and that the prerequisites for exclusive and special rights continue to apply to this service - due to its particular importance for the infrastructure.

- We agree that value-added services should be liberalised and given over to free competition as fast as possible.

To complete the range of common interests, we should not forget that agreement has also been reached on liberalising the terminal equipment market.

In mobile and satellite communications too, first steps have been taken to define a common European position.

The common European approach thus covers the predominant part of the telecommunications sector. If I had to quantify the term "predominant", my estimate would be approximately 90%.

Data communication services: no agreement has yet been reached.

No agreement has yet been reached in the field of data communication services, the pure transport services. Admittedly, these services only account for about 10% of the overall telecommunications sector today, but have growth rates that are above average.

Data communication services may be classified between the network and the value-added services. As regards the network, common priority should be given to harmonisation. In the field of value-added services liberalisation is of greater importance. Depending on how they are classified - more as part of the network or as part of the value-added services - the priorities will be different for data communication services, that is to say the emphasis will either be on liberalisation or on harmonisation.

Closely related are different opinions on the means that should be used to reach these objectives: some consider competition, while others consider regulation, best suited.

This is made even more complex by the basic tendency either to regard competition in data communication services as an opportunity or as a risk. And finally, the fact that the means chosen should be in accordance with the rules of the EEC Treaty certainly plays an important part.

Overall strategy: convergence of results

Ladies and gentlemen, our overall policy, that is to say our overall strategy, must not be determined by the chance result of "struggles for power" within and between the Community Institutions and the Member States. It must solely be determined by the overall objective which is the creation of a competitive open telecommunications market within the framework of the completion of the Internal European Market.

So far, discussions have shown that convergence of the measures taken to achieve this objective is impossible. In view of the different situations in the individual Member States, the different opinions on the best means to be used and the necessary conformance of the measures with the EEC Treaty, I have little hope that a convergence of measures can be achieved.

For the development of a common European approach to data communication services too, our motto must therefore be:

Convergence of results and not primarily a convergence of measures.

Common approach to data communication services

Let me now develop this idea further into a concept for the development of a common European approach to data communication services.

- We should fix immediately a definite date for the introduction of competition in the field of data communication services, if possible, so as to give both public and private service providers the necessary planning security.

- We should also provide flexible transition periods and a protective clause so as to facilitate the adjustment of existing data transmission services on the one hand and not to jeopardise the development of emerging data transmission services on the other.

- There must be no "reversal" of the liberalisation already achieved in the individual countries, meaning in practice that ONP, for example, must not be used to reintroduce regulation where it has just been eliminated.

- Consequently, the choice of harmonisation instruments must be based on the particular competitive situation obtaining.

- And after the transition period at the latest a comprehensive equality of opportunity, European-wide, should be achieved for service providers, for otherwise they might wish to obtain such symmetry by means of different regulation based on bilateral reciprocity, for example.

To put the liberalisation aspects of this concept into practice, we will continue to support the Commission's approach laid down in its Directive on competition in the field of telecommunication services.

As the Commission recently proposed to extend this approach, particularly by inserting a protective clause, this approach takes account of the actual situations and future developments in the individual Member States to an even greater extent. The application of this protective clause must of course be justified.

The above-mentioned motto of a "convergence of results and not primarily a convergence of measures" applies particularly to the implementation of the harmonisation aspects.

We agree on the envisaged result of European-wide data communication services.

We also agree on the basis for these European-wide data communication services: voluntary European standards for the technical interfaces.

We do not yet agree on the way in which these voluntary standards are to be applied to achieve our common objective.

Ladies and gentlemen, with the different competitive situations in the individual countries there is no common way, no common measure we could find which would not "turn back" the liberalisation already achieved, for this is just what the compulsory application of interface standards proposed by the Commission by all or at least by the major providers would do, for example.

This compulsory application of standards for data communication services can only be provided for - and should be provided for too - in those countries wishing to grant licences on the basis of specifications and able to impose the compulsory application of, for example, standards and licensing procedures.

For the Federal Republic of Germany and those countries which have likewise adopted a liberal approach to data communication services, only the voluntary application of such standards is possible, for only thus can the degree of liberalisation already achieved be maintained. In this context we should not forget that the standards are drafted with all interested parties participating - among them network operators, service providers and manufacturers - and that thus also as voluntary standards will be widely applied.

However, to ensure that the objective of a European-wide interoperability of data communication services is achieved, the concept of "reserved power" could be introduced for such countries, analogously to the protective liberalisation clause. This would permit the national regulatory authority to intervene if the free market forces did not ensure the European-wide provision and interoperability of services that is considered necessary.

I clearly see that this way will cause difficulties particularly at the beginning, since a balance between the interests of those countries, which still have government monopolies,

and those, which are characterised by free competition, will have to be found.

Particularly in view of possible competition in future, carriers with a monopoly are mainly interested in offering a standard range of services, which is as uniform as possible, so as to facilitate and successfully continue its transport activity.

On the other hand, private providers participating in competition are mainly interested in offering a range of services that is as wide and as varied as possible.

If a conflict arises between these two interests, the first question that should be asked is, what means achieves the objective best, that is, what means is in the best interest of the customer. But for those asking this question regulation will only rarely be the answer.

The fact that regulation is still often proposed as a solution is mainly due to historical traditions in Europe. As a result of these traditions the public carrier and the state as the entity laying down the basic conditions for competition are sometimes still identical or at least closer together than is appropriate or desirable if one considers the interests of the private providers or the customers.

Some rethinking is necessary here. The state, that is, the entity laying down the basic conditions, must consider the interests of all the parties involved in economic activities and not only those of the public carrier, for this is the only possibility of really changing the dynamics of the national economy as a whole.

Conclusion

Ladies and gentlemen, all things considered, telecommunications in Europe has been put on the right path. We are already very close to a common European approach to communications.

Compromises will be required in resolving questions that are still open. That is quite natural. But we need good compromises: compromises that will not violate the basic principles of the single market. And we must not put off the necessary decisions until a later date, as if resolving them then would be easier. For in 1993 the Internal European Market is to be completed.

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TOWARDS 1992 AND THE CREATION OF A EUROPE-WIDE COMPETITIVE ENVIRONMENT

Dr Filippo Maria Pandolfi
Vice-President
Commission of the European Communities

Where I come from, we have a saying. When there are three things to be guessed, if someone gets one right, we say that is good. When one person guesses two, we say that is a great success. When a person guesses all three, it is a statistical anomaly. The Financial Times guessed all three things.

It guessed the who, the what and the when. Here are the actors, here is the script, now is the moment.

In three days' time a Special Telecommunications Council of Ministers will take place. It was a far-sighted decision of Minister Quilès to convoke this meeting, at which the future of Community telecommunications policy will be determined. I am especially pleased that another key actor is here, Minister Schwarz-Schilling.

With such a cast, today's meeting can be considered as a dress rehearsal.

The New Reinforces the Continuing

I was saying that the Financial Times got the when right. There is a when of current events, there is a when of history. We are living decisive moments for Europe. We are living through a turning point. Emotions are running high.

But rationality should be stronger than emotions: this is the only way to be worthy of the privilege of living through today's events.

Rationality demands reflection on the impact of the new on the continuing, of the unexpected on the known.

One thing is certain: the European Community has acquired a new first priority. This new first priority has a name. The name is Continental responsibility. This is not a personal idea. It is the fruit of the discussions we have carried out at Community level, and most of all of the summit at the Elysée palace on the 18th of November.

Through this round of discussions, the Community, reacting rapidly with a striking convergence of points of view, has defined its doctrine, has found a language for it, and has launched it as a message.

So Europe has a new first priority.

Today we therefore ask ourselves a fundamental question: how does all of this relate to the objective of the Single Market? I would like to recall that in the first half of this decade the Community conceived a great ambition: the priority of the completion of the Single Market.

Does the new priority modify the old one? Does the new effort required of us weaken our existing commitment to the Single European Act? Does it soften our resolve to build the Single Market? The answers are no, no and no.

The new Continental responsibility and the completion of the Single Market of 1992 are two interactive responsibilities. President Mitterrand, on behalf of the European Council, has spoken of an 'inseparable binomial', 'binôme indissociable': the stronger the commitment to the former, the more exalted will be the results obtained from the latter.

The Philosophy of the Single Market: the Parallelogram of Forces

What is the nature of the Single Market? What is its source? What is in its DNA? A small visual aid may be helpful here.

I would like to talk to you about the parallelogram of forces. The process at work is born as a vector of two forces: integration and harmonisation on the one hand; deregulation and liberalisation on the other. Neither of these vectors alone would have the strength to carry the Single Market safely to its landing-place.

What is required is the presence of both forces. Forces which are united even though the two directions of movements have an angle of divergence between them. Forces which Community policy has the job of binding in a parallelogram which can serve as a conceptual map of the European edifice.

Those principles are not the exclusive preserve of Europe. We have absolutely no intention of building a 'Fortress Europe'. To say this does not of course mean that we renounce support for the challenge of our international competitiveness. It means on the contrary that we want a free market in the world.

Telecommunications: a Common Direction, some Difficulties on the Ground

This interpretation of the process at work applies in a special way to the question of telecommunications.

Let us take a closer look at this sector. Telecommunications are the essential infrastructure of the emerging services and information economy. At the same time they are a major economic sector in their own right. The market is now 100 billion Ecu - about £75 billion. This was already 2.5% of Community GDP in 1987. By 1993 it will have risen to 3.6%.

Behind these figures, a whole range of new services is opening up. To give but one example, the Financial Times is printed early every morning in four different countries, thanks to advanced international telecommunications.

These changes in technology pose policy challenges. In 1984 the Community adopted an Action Plan for telecommunications, focused on technology development and on standards. In 1987 the Commission proposed market liberalisation in its Green Paper. Liberalisation of the terminal market has already been enacted. The services market is to be liberalised. A general regulatory framework is being put in place.

The whole Community must play by consistent and fair rules in the new competitive environment. The world of telecommunications is the ensemble of conditions, instruments and tools which support the European 'agora'. 'Agora' is the Greek word for 'forum'. I am using the word 'agóra' in all its senses: as a physical space, as a meeting-place for communication, as a market-place.

A modern agora needs to be a free space; but it also needs traffic signals!

Once again, liberalisation on the one side, harmonisation on the other. Only liberalisation can give European users access to the vast range of new telecommunications applications. Harmonisation is needed to break down the technical barriers between the 12 national markets, and produce one large and unified telecommunications market.

How does this approach apply to the services market?

First, liberalisation.

The nature of the new telecommunications market - characterised by diversity, flexibility and rapid change, requires the liberalisation of a sector that has traditionally been the preserve of monopoly.

Two things are clear:

● firstly, all countries agree that the network and voice telephony may, for the time being, remain subject to special rights;

● secondly, everyone agrees that value-added services must be liberalised.

That leaves one question open: how to treat packet-switched and circuit-switched data services. Today they represent roughly, depending on the country, 2% of telecommunications services turnover. If I could quote the figure for 10 years' time, it would be considerably greater.

This problem therefore cannot be underestimated. Nor must it be overestimated.

There should be no doubt that the Commission's basic policy in this field is to go for liberalisation. My colleague Sir Leon Brittan and I are working together to this end. I am sorry that this will mean extra work for Sir Leon's competition directorate. But to everyone his duty!

At the same time, liberalisation cannot be implemented mechanically.

The situations of the Member States are very diverse. This is true for economics, for their technological level and for the political environment.

The issue is therefore one of modalities of implementation rather than of principle - even if the notion of 'public service' may be considered in a slightly different light among the Member States.

Some Member States would like to benefit from a a little more time to liberalise. Others want to use a licensing procedure. In that case the question to be debated concerns which conditions, besides the essential requirements, may be authorised in a way that does not hamper the liberalisation process.

Secondly, harmonisation.

The Commission has proposed a Framework Directive on Open Network Provision, or ONP. The idea of ONP is to set out the terms for access to the network infrastructure by new service providers. This Framework Directive defines the general principles. They will be applied concretely in further Directives, defining Open Network Provision service by service.

There is a consensus on the general approach to ONP. But there is debate on one issue, closely linked to the services Directive. Some hold that ONP conditions should apply only to the network operators, as a sort of counterpart to the exclusive or special rights which they enjoy. Others see a danger of the establishment and abuse of excessively dominant positions by multinational private operators. They believe that ONP conditions should also apply to these large multinational private service providers.

The Commission proposes an intermediate position.

ONP conditions should be mandatory on those with exclusive or special rights. At the same time, private firms which conform to these rules by choice will benefit from a presumption of conformity with the Community's competition rules. There is a further need to ensure that the use of different standards does not prevent users from profiting from the provision of interoperable services.

A Precondition of the Common Free Market: a European Nervous System

Even the unified vector is not enough. The Single Market cannot be reduced to that. It is not a blank space. An organism cannot function without a nervous system. The nervous system of the single market will be the interconnected administrative, transport and communication systems.

Our 'agora' is a living space. Living through a system of interconnections. Living and linked up through a real nervous system of infrastructures and services.

This nervous system should allow the administrations of the national governments to interwork efficiently. So it is

not enough just to establish appropriate rules of the game for 1992. It is also necessary to establish adequate infrastructures and services to let the market function freely. The administrations of the national governments must be able to interwork promptly and efficiently.

The Single Market means extra flows of goods, services, people and information. We need adequate infrastructures to support these new flows. There can never be a Single Market without a unified network. Twelve separate networks imply twelve separate markets.

I know, for example, that in this country there exists a legitimate preoccupation with such threats as terrorism and drug trafficking: it may be a wonderful idea to pull down the walls within the Community by 1st January 1993, but these real dangers concerning criminality must be tackled. The point is well taken. But any practicable way to do this must involve uniting the present twelve information systems for transport, for the police, etc, into a single system.

Here the Commission is called on to play a facilitating role.

A choice will have to be made between many different technical options. There is a need for preliminary research to help with these choices. There is a need to develop and improve existing technologies for this nervous system. For public administration, the nervous system needs to be developed for home affairs, for justice, for customs and for security. For the individual user, the emphasis will be on transport, health, distance learning, environmental protection and access to rural areas.

We can already identify specific areas calling for Community involvement. These include the development at European level of the Integrated Services Digital Network, of a Europe-wide videotex network, and of electronic data interchange services. Initial applications linking such large users as public administrations are

worthwhile in their own right. They will also be trail-blazers for the wider interconnection of these services.

Given the scale of research needed to make a reality of these aspirations, the Commission must play a major role at the level of prestandardisation and precompetitive research and development.

This is not an invasion of private activities. It does not involve a new layer of regulation. It is not a new dirigisme. It is not bringing in bureaucracy through the back door. It is simply an application of the principle of subsidiarity, the principle that nothing should be decided at Community level that is better done at national level. It is the only way to make the Single Market work properly.

Conclusion

We are thrice blessed.

As I said at the beginning, today's debate does not stand alone. It takes place, with exceptional timing, on the even of two crucial events:

- the Council of Telecommunications Ministers on 7th December;

- the Council of Research Ministers on 15th December.

During this dress rehearsal, I have shown that we have:

- a common responsibility: for the Continent of Europe;

- a common aim: the completion of the Single Market;

- a common purpose: to synthesise liberalisation and harmonisation and build a European nervous system.

Now we must turn these common approaches into common decisions.

We await the real performance.

COMPETITION VERSUS REGULATION IN SERVICE PROVISION - THE RESTRUCTURING OF ITALIAN TELECOMMUNICATIONS

Ing Marino Benedetti
Counsellor
STET Societa Finanziaria Telefonica pa

I will try to explain the situation in Italy and the restructuring that is under way. The situation is considered to be rather complicated as far as public operators are concerned. The main ones are shown in Figure 1, but there are a few more. We have SIP, that is the national telephone operator: it operates the local service and part of the national service. We have a state agency called ASST, which is in charge of part of the long distance national telephone and the international telephone system in Europe. We have Italcable, a company which has all the intercontinental telecommunications, and finally, the PT ministry which through one of its departments operates the telex service. In addition, we have another carrier which has the concession of all satellite communications.

Figure 1

ITALY - PUBLIC TELECOM. OPERATORS	
SIP	LOCAL & NATIONAL TELEPHONE
ASST	NATIONAL L.D. + INTERNATIONAL TELEPHONE
ITALCABLE	ALL INTERCONTINENTAL TELECOMMUNICATIONS
DCST	TELEX
(TELESPAZIO) SATELLITE CARRIER	

Figure 2

	EMPLOYEES (NUMBER)	TURNOVER (MILLION POUNDS)
SIP	82,300	6,080
ASST	13,250	883
ITALCABLE	3,350	266
DCST	14,100	318

I will try and give you an idea of the present situation, some of the history and some of the moves to change a situation which, even in today's world of diversification and divestiture, is still considered a bit exceptional. You may have an idea of the four major operators by comparing the number of employees and the turnover (Figure 2).

Figure 3

PUBLIC OPERATORS OWNERSHIP	
SIP	IRI - STET (> 50%)
ASST	MINISTRY PT - AUTONOMOUS AGENCY
ITALCABLE	IRI - STET (> 50%)
DCST	MINISTRY PT - DEPARTMENT
TELESPAZIO IRI - STET	

Figure 3 shows the ownership of the four major operators and Telespazio. Two of them are under government control through the PT ministry, and two of them plus Telespazio are under the control of IRI (Figure 4). IRI is an entity of the Italian government which supervises the participation of the state in certain industrial sectors. By law the public telecommunication operators which do not come under direct control of the government must be controlled by IRI and by STET, the financial holding of IRI in the telecommunications sector, through at least 50% ownership. The present share of IRI and STET in SIP is 62% and in Italcable is 51%.

Figure 4
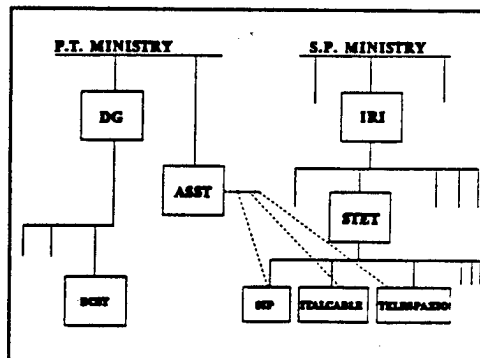
Now come the complications. We have two overseeing bodies for the whole telecommunication structure and services. One is the PT ministry, which has the control of service quality and all regulatory powers; the other one is the State Participations ministry which controls IRI and the companies of the STET group from the financial and economic point of view. The dashed lines in Figure 4 show that SIP, Italcable and Telespazio, that come under

STET's supervision and management, are subject to the supervision of ASST and the PT ministry from the quality of service and regulatory point of view. One of the anomalies that can be seen is that one of the companies - ASST - is at the same time an actor and a controller.

Figure 5

ITALY - SOME BASIC FACTS (END 1988)	
TEL. SUBSCRIBERS	20.1 MILLION
PER 100 POPULATION	35
TEL. SETS	29.3 MILLION
PER 100 POPULATION	51
INVESTMENTS	
(TELECOMM.)	7,300 BN. IT. LIRE
TURNOVER	
(TELECOMM.)	16,800 BN. IT. LIRE
NETWORK DIGITALIZATION	
- LOCAL	25%
- LONG DISTANCE	70%

Some statistics now. Figure 5 shows Italy's position on some basic statistics - telephone subscribers, sets and density. From these figures it can be seen that Italy now is lagging a little behind the major countries. I shall briefly explain the reasons in a moment. The investment figures and turnover are 1988 figures and cover the whole telecommunications sector. An indication of the technical achievement can be obtained from the degree of digitalisation of the network: local, 25%; long distance, 70%. The following forecasts can be compared with the 1988 figures (Figure 6). In 1992 we plan to have 26 million subscribers: we have increased the rhythm of growth and we are adding more than one million subscribers per year. Network digitalisation in 1992 will reach 47% in the local network and 100% in the long distance network. This requires a major effort in investments: SIP has adopted a new investment programme which in the years from 1989 to 1992 will pour more funds than in the past into the system, in order to have in 1993 a basic telecommunication structure comparable with that of its European partners. Considerable growth is therefore foreseen for the coming years.

A bit of history. It all started in 1925. At that time the government decided to divest and privatise telephone operations. It divided Italy into five areas and put them up for sale (Figure 7). They were sold to successful bidders, all private companies. There was also a sixth area, consisting of the long distance system, but apparently at that time long distance was not so profit-making as it is now and there was only one bidder. The government decided to retain the long distance system for itself and ASST was born.

The five private companies grew. In 1933 three of them converged into STET, which was formed as a holding company of IRI for the telecommunication sector. In the mid-fifties a wave of nationalisation swept over Italy and,

Figure 6

ITALY - FORECASTS (1992)	
TEL. SUBSCRIBERS	26 MILLION
PER 100	42
TEL. SETS	36 MILLION
PER 100	60
NETWORK DIGITALIZATION	
- LOCAL	47%
- LONG DISTANCE	100%
INVESTMENTS	
(1989)	9,600 BN. IT. LIRE
(1990)	10,900 BN. IT. LIRE

Figure 7
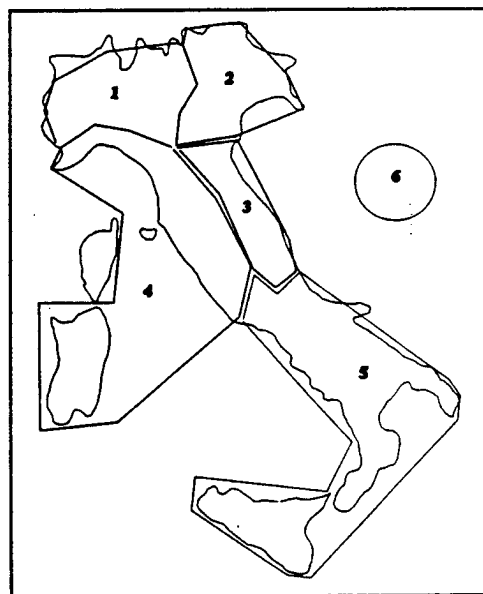
as I said, a law was passed which required government majority control of the telephone operating companies under IRI/STET. STET bought the two remaining fully private companies and in 1958 all five regional companies became part of the same group. STET also acquired the majority of Italcable shares.

A few years later the electrical energy sector was also nationalised, and IRI, which was a major holder in this sector, became a creditor of the Italian state. In 1964 IRI merged the five regional operating companies and a few of its electric companies - that had nothing left but huge credits payable by the state over a 10-year period - and SIP was born, the national telephone operating company.

This in part explains the complexity of today's picture. For a time it worked well, in particular in the years when the government debt payments continued to flow. In the mid-seventies Italy was one of the leaders in Europe and

Figure 8

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REASONS OF SLOW-DOWN

FINANCIAL
  ● NEGATIVE OVERALL CLIMATE
    (COUBLE DIGIT INFLATION)
  ● FREEZE ON TARIFFS
  ● CONSEQUENT FREEZE ON
    INVESTMENTS

ADMINISTRATIVE SHORT COMINGS
  ● COMPLEX STRUCTURE
  ● DUPLICATIONS OF PLANT
  ● IMBALANCES IN TARIFF
    STRUCTURE

POLITICAL
  ● DELAYED RECOGNITION OF
,   STRATEGIC ROLE OF TELECOM
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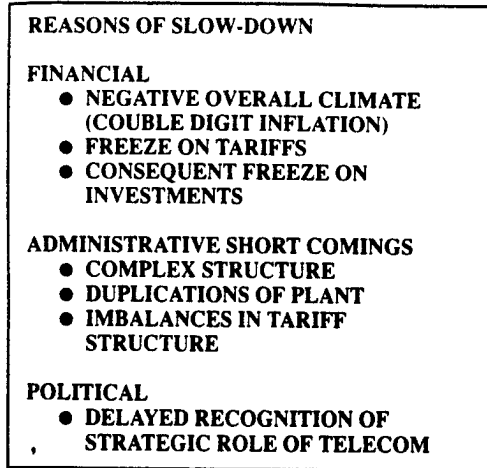
one of the first countries to complete nationwide subscriber direct dialling.

Then, due to a number of factors, the situation changed and the growth of the Italian telephone system slowed down. Among the main reasons (Figure 8) the first was financial. With the negative overall economic climate of the late seventies - we had double-digit inflation - SIP could not obtain an increase in tariffs for nearly three years; at the end of this period, with inflation ravaging, SIP had no choice but to freeze investments, and that of course left a mark for many years to follow. Other reasons were the administrative shortcomings of a complex structure, duplications of plant and equipment, and imbalances in the tariff str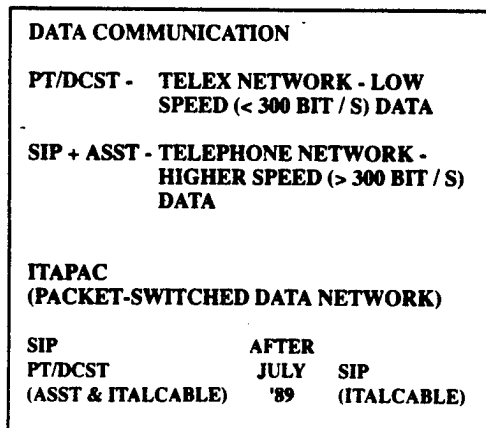ucture: since the government-owned company handled the long distance traffic, the government was not pressed to lower long distance tariffs and increase the local ones. Finally, a political factor was the delayed recognition of the strategic role of telecommunications. All this is now changed.

Figure 9

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DATA COMMUNICATION

PT/DCST -  TELEX NETWORK - LOW
           SPEED (< 300 BIT / S) DATA

SIP + ASST - TELEPHONE NETWORK -
             HIGHER SPEED (> 300 BIT / S)
             DATA

ITAPAC
(PACKET-SWITCHED DATA NETWORK)

SIP              AFTER
PT/DCST          JULY   SIP
(ASST & ITALCABLE) '89  (ITALCABLE)
```

One example of the difficulties is given by the late start of the packet switched data network in Italy (Figure 9). The PT branch of the administration that deals with telex has

low-speed data within its domain, while SIP and ASST, in charge of the telephone network, are responsible for higher speed data. This dual competence meant delays when ITAPAC, a packet switched data network, had to be built: the PT operated the main nodes and SIP the peripheral equipment, in addition to acting as interface with subscribers. ASST and Italcable were also involved. Now this has been solved when a government decree has permitted the transfer of the whole operation and ownership of the ITAPAC network to SIP. This is only one example to show how conflicting interests can delay development.

Figure 10

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TELECOM RESTRUCTURING BILL

● DRAFT APPROVED BY GOVERNMENT
  - MARCH '89

● SUBMITTED TO PARLIAMENT
  - MAY '89

● NOW BEING EXAMINED BY THE
  PUBLIC WORKS COMMISSION OF THE
  SENATE, WHICH HAS DECISIONAL
  POWER

● WITHIN 6 MONTHS AFTER APPROVAL
  GOVERNMENT AND NEW LICENCEE
  MUST REACH AN AGREEMENT ON
  LICENCE DETAILS (OBLICATIONS,
  COMPENSATION, ETC.)
```

Figure 11

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MAIN FEATURES OF BILL

● ALL TELECOMMUNICATIONS
  SERVICES OPERATED BY ONE
  LICENCEE

● LICENCEE MUST BE CONTROLLED BY
  IRI

● GOVERNMENT (MINISTRY P.T.)
  RETAINS ONLY REGULATORY AND
  SUPERVISORY POWER

● GOVERNMENT OPERATED SERVICES,
  AND RELATIVE PLANT AND
  EQUIPMENT (ASST AND PT
  ADMINISTRATION), TRANSFERRED TO
  NEW LICENCEE

● EXCEPTIONS:
  ● TELEGRAMS, E. MAIL & PUBLIC
    TELEMATIC SERVICES HANDLED BY
    POSTAL OFFICES
  ● BROADCASTING
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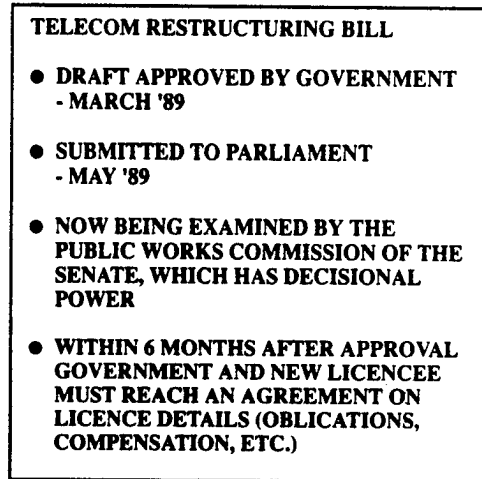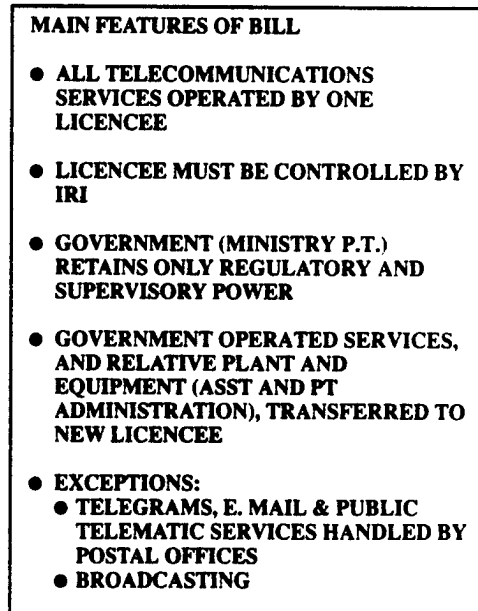
Now let us come to the restructuring. The government was aware that something needed to be done in order to streamline the Italian telecommunications system. After

consideration the government approved a draft Bill in March of this year which was submitted to parliament in May (Figure 10). At present it is being examined by the Public Works Commission of the Senate, which has decisional power. The draft project envisions that within six months after approval government and a new licensee should reach an agreement on all the details.

What are the main features of this Bill? First (Figure 11) all telecommunication services are to be operated by one single licensee, which must be controlled by IRI and STET, according to the present law. The government, through the PT ministry, will retain only regulatory and supervisory power. Another Bill approved by the government at the same time covers the restructuring of the PT ministry. It is envisaged that an autonomous agency will be created for post, postal bank and public telematic services (which means those telematic services that can þe used by the public in a post office).

Another clause of the Bill is that the services now operated by the government, and the relative plant and equipment, will be transferred to the new licensee, with the exception of telegrams, electronic mail, public telematic services handled by postal offices, broadcasting and broadcasting structures.

Figure 12

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OPTION C   (NOW BEING CONSIDERED;
WOULD NEED A FEW AMENDMENTS TO
THE BILL)

● ASST AND PT OPERATING UNITS
  (TELEX AND SHIP-TO-SHORE RADIO)

● IN A MEDIUM-TERM PERSPECTIVE (2
  YEARS) ALL PTOS ARE MERGED INTO
  A SINGLE LICENCEE (WITH POSSIBLE
  SPECIALISED SUB LICENCEES WITHIN
  THE STET GROUP)

● THE PT MINISTRY MAINTAINS POLICY
  AND REGULATORY SUPERVISION

● STET HAS FINANCIAL, ECONOMIC
  AND OPERATING CONTROL
```

How will this be implemented? There has been a debate in Italy over the possible practical solutions, a debate which is still going on. There have been mentioned options of a super-STET, that would merge all public operators within STET, or a super-SIP, merging all operations within SIP. A third option is now being considered (Figure 12), according to which ASST and the PT operating units would be transferred to a new

company under IRI-STET control, with the final restructuring completed in about two years' time. All services will be given to a single licensee which could possibly be assisted by sub-licensees under its own control. After approval by Parliament the Inter-ministerial Committee for Economic Planning (CIPE) would give IRI the necessary guidelines in order to accomplish the restructuring.

That is all that up to now I know and I can say.

As the general theme of this conference is liberalisation, I will not end my speech without giving a hint about liberalisation moves and trends in Italy (Figure 13). Terminal equipment has been traditionally open in Italy. Thirty years ago you could buy a small PABX or an additional set on the market. There were some remaining restrictions about the first telephone set and modems, that have been lifted this year. Value added network services are free on condition that the providers must use the public network facilities. Italy will, of course, change whatever will be needed to be in line with the approved European Commission policy.

Figure 13

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LIBERALIZATION TRENDS

● TERMINAL EQUIPMENT
  - TRADITIONALLY OPEN
  - REMAINING RESTRICTIONS LIFTED
    1988-90

● VANS
  - FREE
    BUT USE OF PUBLIC NETWORK
    FACILITIES REQUIRED

● CONTRACTUAL SERVICE
  OBLIGATIONS ACCEPTED BY SIP-1989

● SEPARATION OF REGULATORY
  POWER AND OPERATIONS - AGREED

● RESERVED SERVICES - WILL MOVE IN
  LINE WITH ECG POLICY
```

There were two more steps. One is that SIP has accepted contractual service obligations for users; the other is that everybody agrees on the separation of regulatory power and operative activities, as you have seen from what is provided in the Bill under consideration.

I hope I have given you not too confused a picture of a situation that may be confusing for outsiders.

WORLD TELECOMMUNICATIONS

RATIONALISATION IN THE TELECOMMUNICATIONS INDUSTRY

Mr J Deas
Alcatel NV

It is, I think, my responsibility to convert the overrun in the programme into a definitive one, but I am assured that the cocktails which are to be served will be served so you cannot excuse a Scotsman for having kept you away from an after conference drink.

It is a real pleasure to follow such distinguished speakers today, and I have been asked to talk about the industry experience of Alcatel. I think it is important to remember that in the European telecommunications world the industry of which my company is a representative employs something like 400,000 people out of a total of something like 1.3 million people employed in telecommunications in Europe. That would be a strict definition of telecommunications, because I notice that quite often we shift back and forward between telecommunications and information technology. I should like to come back to that problem later on.

We probably are qualified to talk about industry rationalisation because we are now ending the third year of the existence of Alcatel. When we asked the Financial Times what sort of subject they had in mind, they said:

> "The internationalisation of the total manufacturing industry, the consolidation among the big players, how small players are developing new products and the way manufacturers are moving into services."

That is a vast subject, and since I have only half-an-hour what I would like to do is talk about four things specifically. I would like to talk to you about trends, because obviously there are some underlying trends which affect our industry, and explain why rationalisation is necessary. I would like to sketch out what for our company, and I think most of the other telecommunications companies would agree with us, we consider to be the key success factors for the future, and I would like to tell you in a few words how we have tried to bring Alcatel together. Finally, I would like to address the future and some of the challenges that we have to face up to.

Rationalisation is a difficult word to talk around in any case because it is one of those words which as the French would say is like a bottle that is half empty or half full. The half-empty part of the bottle of rationalisation is the fact that it means cutting, reducing and streamlining, but the more positive half-full bottle side is the fact that it is exploiting synergies and getting a bigger bang for the buck that you have.

Some of these trends obviously you know very well. They make our life difficult but they also open up a lot of major opportunities to us. The first one is the electro-mechanical to digital trend. Obviously that is now fully integrated in companies like Alcatel, but it is almost a miracle because

ALCATEL   Trends : technology

- ▼ Electromechanical to digital - a major revolution, now integrated.
- ▼ Copper to fibre optics - explosion of bandwidth capacity ; decreasing cost of transmitted bit/s ; higher speed ; longer repeater distances.
- ▼ Micro-electronics - cost per transistor function, cost per 1 bit memory, more functions.
- ▼ Satellite communications.
- ▼ Terminal price-performance and workstation functionality.
- ▼ Growing software content in added value.

today Alcatel is a company whose capabilities are made up of microelectronics and software. If you look at what Alcatel was 15 or so years ago, there was not much data processing and there were not many software engineers. I think the fact that we have been able to come through this revolution towards digital systems is proof that in the future we are capable of going through some even more difficult revolutions.

As you know, there is the copper to fibre optics evolution which means many things, such as the explosion of band width capacity, decreasing costs of transmitted bit per second, higher speed and longer repeater distances. This is still in process. We still have a long way to go before we have the full new network architectures using extensive fibre optics, including fibre to the subscriber, which most people are forecasting for the mid-1990s. Of course, much of this will be linked to the broad band ISDN developments.

As in the computer industry, the third trend affecting us is microelectronics. The cost per transistor function, the cost per one bit memory and the number of functions that one can do are obviously things that we have to take into account every day in our product development. We are processing more and we are processing it faster and cheaper. For example, today a simple subscriber card in a public switch has 10 kilobytes of memory, which is quite a lot of processing power.

The next factor affecting us is satellite communications. Obviously this is creating new networks and new international communication and traffic patterns and it is also a new technology which the telecommunications systems and product suppliers have to face up to. You probably read in the press recently that we are facing up to it not only in terms of earth stations but also in terms of payloads and developing our capability to be an integrated platform supplier in satellites.

We are also, of course, concerned with terminals, which are becoming more and more powerful and sophisticated. Already today and even more in the years to come everybody will have on his desk the equivalent of the power of what was mainframe a few years ago, and of course the functions, voice data and image, that are going into these terminals are quite considerably enhanced every day.

Software in our products represents between 6% and 30% of the sales price of the products. As things have turned out, we are one of the biggest employers in Europe of software engineers. People do not often think of telecommunication companies as software companies, but we are.
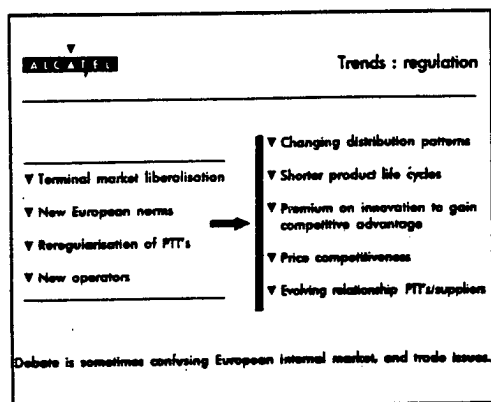
We have talked a lot about the other trends today and regulation. We of course have some ideas on what is good for Europe and the European industry and subscriber, but we also have to look at these regulatory trends and interpret what they mean for us in terms of our business development. The terminal market liberalisation trends are constantly creating more and more open markets. The new European norms being developed by ETSI are also a factor contributing to the fast opening of European markets. The re-regulation of PTTs and the new operators which are emerging are trends which mean that Alcatel and other companies like us must be able to respond to the requirements of those operators, in terms of not only more efficient management of their networks but helping them to develop the new subscriber services which they need from day to day.

The overall results of some of these trends I have tried to summarise on the right of the slide. There are the changing distribution patterns. The distribution problem is a major problem for most telecommunications suppliers, because whereas in the past very often they went through PTTs to distribute terminal and customer premises equipment, today they must be able to sell through PTTs and also through their own direct distribution channels. There are the shorter product life cycles. We are forced into and even desirous of shortening product life cycles. We are becoming more competitive, giving more and more differentiating features to our products and renewing our products more quickly. That means that there is a premium on innovation to gain competitive advantage. Whereas very often in our industry one talks about the big

bang type of innovation - ISDN, broad band - today and in the few years to come, we feel that the winning factors in competitive advantage will be what the Japanese call the "gradual one inch up stretch" - fast product renewal and fast introduction of new features.

On price competitiveness, the opening of public procurement rules force our companies to become more and more price competitive. I do not think that European companies are fundamentally less competitive than their North American or Japanese competitors. I think that in a number of markets in Europe which are said to be "low price", companies like ours have proved that we are able to compete very well.

Lastly, there is the evolving relationship between PTTs and suppliers, which is something that I would like to come back to at the end. While it is true that the relationship between suppliers and PTTs has traditionally been on a national level, as was said earlier on this afternoon, it has more and more to be looked upon at a European level and we must find European vision to make this evolve.

The comment on the bottom of the chart summarises something that has been said twice today, once by Mr Quilès - namely, that in these regulatory evolutions one should not confuse the creation of the European internal market and the positioning of that European space within a worldwide triad, Europe, North America and Japan.
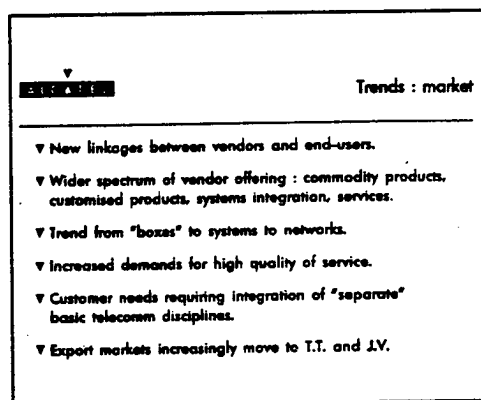
Some of the market trends obviously result from the technology and regulatory trends. As I said earlier, companies like ours have to create new links between themselves and the end users, more direct marketing linkages, more direct distribution and service linkages and obviously a more market segmented approach than in the past. One of the paradoxes of our business is the fantastic growth in the variety of products and services that we are selling, because we have to market not only commodity products but customised products. We also have to do systems integration and be a very efficient service company.

A point I would also like to come back to later is the trend from boxes to systems to networks. Fewer and fewer companies like ours are supplying boxes. More and more

we are supplying sub-systems and systems and more and more we will be asked to put together sets of equipment or software which can be commissioned on a working basis and which are in fact sub-networks or networks.

Demands on quality of service are also growing. Speed of response to customer demands, quality of service, quality of follow-up and helping the customer to evolve in the use of the telecommunications equipment which he has bought are increasingly important. Another problem for our industry in terms of market trends is what I call integration of separate basic telecom disciplines. As you probably all know, in our industry traditionally there were the switching people, transmission people, cable people and private communications people, and they all tended to have a very different philosophy on life. More and more the systems which the customers are asking us for are forcing us to put together these different disciplines and think about network architectures and network systems which require integration of switching, transmission, cable and customer premises equipment.

Finally, there are the export markets. We have talked a lot about Eastern Europe, but what is true of Eastern Europe is also true of most of what we call the Third World countries - namely, that the export syndrome to these markets is rapidly declining. More and more one is involved in technology transfer and joint ventures, and our industry must face up to the fact that we have to become capitalistic partners to many of these countries in order to help them to develop their telecommunications infrastructure.

%	Europe	N. America	Japan	Row
Switching	35	28	16	21
Transmission	28	33	18	21
Comm. cable	40	19	11	30
Bus. comm.	39	38	13	10

Trends : market globalisation

The requirement to be present on the global chess-board

Telecomm world market
estimated breakdown 1989

All of these trends make it important for companies like us - because of the cost of development of technology, regulation, the way customers are pushing us, standards and opening frontiers - to be at least a European corporation, if not a worldwide corporation. What I have here is a breakdown of the world market which shows that in order to have access to the market potential of each product segment, it is important to be present on a large number of the squares of that global chessboard. For example, Alcatel today is active in 10 out of the 16 squares on that chessboard.

However, we should not lose from view the fact that the telecommunications market, the market for telecommunications equipment and systems, is not a fast-

	Public Network Switching	Transmission	Business Systems	Telecomm Cable	Total
Europe	1.3	3.4	3.6	0.5	2.2
N. America	6.5	12.1	4.4	-1.1	4.5
Japan	2.6	7.0	6.3	1.0	5.5
Rest of World	2.8	4.3	8.8	6.1	5.5

Trends : market growth

Market growth for telecomm products and systems is low : Around 5% p.a. for the next 5 years.

Market growth rate forecasts, 1989-94, for telecomm equipment and systems (%)

growing market. In Alcatel, we estimate that the market growth will be about 4% to 5% per annum over the next five years, in current terms. Some people think that it may be higher, but I think there we have the problem of defining what we mean by the industry. You must also take into account the fact that we are talking here in current money terms and that that must integrate the deflationary effects of technology and competition. This results in an overall growth which is very moderate. It means, of course, that competitor cross-penetration will be played in a global market which is not growing very fast.

	1987	1988
US	-490	-550
Japan	-940	-1180
EFTA	+200	+50
Rest of world	+2270	+1800
Total	+1040	+100

Trade trends :

Telecommunications is the remaining I.T. sector in which Europe has a trade surplus. But it is declining.
The EEC's telecomm trade balance with major partners (in Ecus millions)

This also demonstrates the openness of the European market.

The European industry in which we are an actor is the remaining information technology sector in which Europe has a trade surplus, but it is declining. The figures which I have here were put together three weeks ago before we had the final trade figures. The final figures are very close to those, but in spite of some statistical problems because the bureaucrats changed the system between 1987 and 1988, they show that we have a deficit with the US, a growing deficit with Japan, a declining deficit with EFTA countries and a declining deficit with the rest of the world. It is an alarming picture for the European telecommunications industry, and in spite of what is said about fortress Europe, it shows that the European market is much more open than many people would claim.

What sort of industry structure do we have today facing up to those trends, growth perspectives and global marketing challenges? Following the recent restructuring and

ALCATEL   Industry structure :

Present industry structure for telecomm equipment and systems
is of a 4 tier nature.

Three → 1st tier   : ATT, Alcatel, Siemens
     (> 7 Becus)

Four → 2nd tier   : NEC, Northern Telecom, LM Ericsson,
     (4 to 7 Becus)   Motorola

Five → 3rd tier   : Fujitsu, Bosch, GPT, Hitachi, Philips
     (1.5 to 4 Becus)

Still → 4th tier   : Teletra, Nokia, Rockwell, Ascom, etc
many   N.I.C. and developing country firms.

rationalisation, the structure of the industry is basically four-tiered. There are the first-tier companies doing more than seven billion Ecus of sales, three companies; the second-tier companies, four companies, whose sales are in the range of four to seven billion Ecus; five third-tier companies with sales in the range of 1.5 to four billion Ecus; and we have still many fourth-tier companies in the developed countries, newly industrialised countries and developing countries. So I think one could say that we have today seven large players, but we are still a long way from some of the forecasts which say that we are moving towards a much more limited number of players than that in our business by the 1990s. There clearly is still some potential for rationalisation, concentration and restructuring.

Let me quickly go through some of what we see as being the key success factors for the telecommunication equipment and system suppliers.

ALCATEL   Key success factors for telecomm equipment
                                 and system suppliers

▼ Internationalisation / globalisation.

▼ Evolving relationship with PTT's
    - New forms of cooperation / partnership
    - Ability to combine cooperation
     and competition with PTT's

▼ International price competitiveness

▼ Time to market.
    - Anticipation of customer / end-user needs.
    - Rapid design-to-launch cycles.
    - Faster product renewal.

Obviously many of them are the result of what I have been saying in the last few minutes. There is the requirement to internationalise and to globalise, with the costs, risks and financial surface which that entails. There is the evolving relationship with PTTs, which requires new forms of co-operation and partnership. It also requires the ability to combine co-operation and competition with PTTs. As I said earlier, in most countries in Europe telecom equipment manufacturers are in competition with PTTs in the distribution of customer premises equipment and terminals, but a number of companies in

our industry have already started to move into areas which put them in more direct competition with PTTs, in network operation, for example - cellular, PCN.

Another key success factor is international price competitiveness. One must constantly look for the lowest cost ways of doing everything. That is something which we have tried to do in Alcatel. There is also time to market. Our companies must learn to anticipate the end user needs. Rapid design to launch cycles and faster product renewal are also important. This may be difficult and is certainly a challenge for some companies which have traditionally been considered as being rather heavy-footed.

ALCATEL   Key success factors –

▼ Enhanced capability in software.

▼ Stronger capability in systems integration including
    voice / data integration.

▼ Growing role in, and control of, distribution and
    services channels.

▼ More direct involvement in technology adoption process.
    (e.g. ISDN, wide-band, broad-band).

Enhanced capability in software is another factor, as I said earlier. The software part of our business will grow constantly, and we must develop our software architecture capabilities, software development tools and software application capabilities. Stronger capability in systems integration including voice and data integration is important, and, as I said earlier, we must increasingly emphasise the importance for our companies to control our distribution channels for terminals and customer premises equipment. We have experience of that in France, where for many years customer premises equipment has been liberalised, and we feel in Alcatel that we have a good basis which we have been trying over the past three years to translate into fact in the many other countries in which we are active outside France.

A final factor which probably deserves a one-hour discussion in itself is the more direct involvement in the technology adoption process. We feel that today it is becoming less and less obvious that one can just develop a technology and throw it onto the market. The successful experiences in technology adoption over the past few years have involved social experimentation, like the Minitel in France. ISDN has been lacking that, and it is certainly one area where there is social experimentation to be done in order to find the right uses for the technology and the right way to harness that to the needs of the subscriber.

We have constraints, of course, on being effective in developing these key success factors within our companies. One of them is standards. There are as yet few cases where we have full European-wide standards - we do not even have one in ISDN - and even fewer cases where we have worldwide standards. Trade barriers are a real problem.
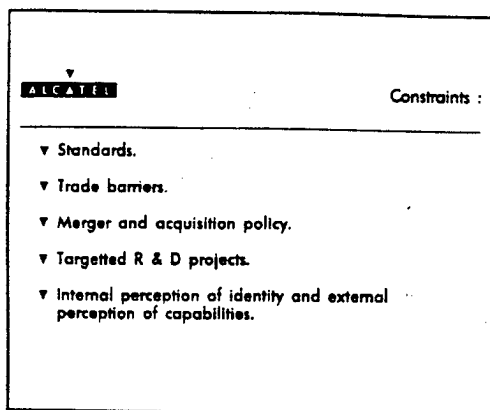
Reciprocal free trade is an obvious objective for all of us. It is not the case today. Merger and acquisition policy also is an area which could be a constraint. National and European governments should be aware that the considerations to take into account when approving mergers should no longer be national or even European but should be expressed in terms of global competition.

Mr Pandolfi spoke about targeted research and development projects this morning. Lacking in Europe today are large-scale communications infrastructure projects in which we can develop the technologies on a partnership basis with the operators, equipment suppliers and subscribers. It is a major challenge for Europe. Other countries like the US and Japan have these kinds of projects. We are lacking them in Europe and we are very happy to see that the European Commission recognises that and is pushing in that direction. One of the other constraints we have is the image that we sometimes have of ourselves, in which we do not realise just how fast we have gone down the road towards self-renewal, and sometimes the external perception of capabilities. As I said earlier, I do not think anybody would have guessed that a company like Alcatel was one of the largest employers of software engineers in Europe.
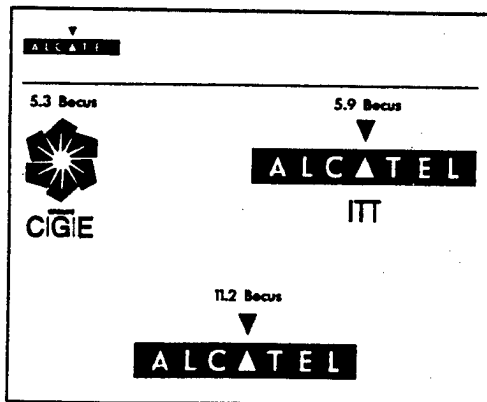

Let me just talk quickly about Alcatel now. When we created Alcatel, we had an initial ad which said, "One plus one equals one". A lot of people thought, "Hey, these guys don't know how to count", in spite of the fact that there are many French polytechnician engineers in the company.

The idea there was to make one homogeneous company out of Alcatel. When we put that together, it was roughly speaking 5.3 billion ecus of CGE sales and 5.9 billion ecus of ITT sales, which made up an Alcatel of about 11.2 billion ecus. What we have been able to do, I think, is to make it into one plus one being more than two in terms of the financial performance, the market performance.
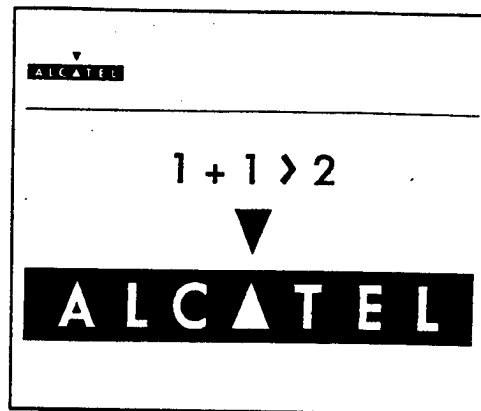
It is very difficult to explain why a company progresses and has some success. We still have a lng way to go, but I thank most people would recognise that our performance over the past three years has been above what was generally expected. I think there are three basic reasons for this and they are in terms of different aspects of the way in which we have managed the company. One is the strategic focus.
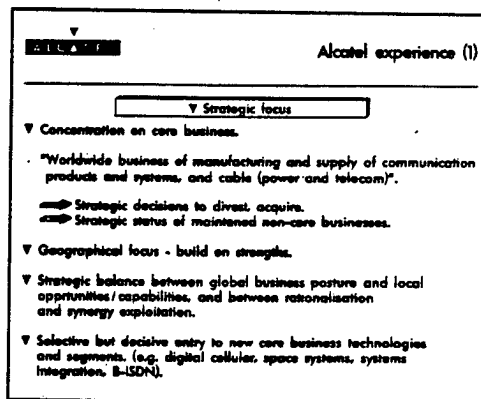
An important aspect has been the concentration on our core business. That is obviously a moving target. We spent a lot of time thinking about that., and I think it is important for it to be shared all the way through a company. The core business is the worldwide business of manufacturing and supply of communication products and systems and cable. Defining it in that way led us to divest a number of activities which we considered to be non-core.

It also enabled us to give a strategic status to any maintained non-core business which was profitable and had good positions. We have gone ahead with some acquisitions, particularly in the telecom cable area, but in other areas we have concentrated on consolidating what we have and making the most out of it. We have had a considerable

amount of geographical focus. There are clear strategic decisions we made not to do some things. We did not go into the US public switching market and we did not, for example, decide to be part of the club of manufacturers that is making minus 15% ROS on PABXs in the United States. We decided to concentrate where we were strong and build out from that rather than go into more risky ventures.

Another fundamental objective we have had, which we will see later in our organisational concept, is to develop a strategic balance between a global business posture, really international global businesses, and local opportunities and capabilities. We have kept strong local companies in all the countries that we are in with strong profit and loss responsibility and a real role in customer relations, distribution, development and the overall contribution to the way in which we should be managing each strategic business area.

We have made some selective entries into new core business technologies - for example, in digital cellular GSM technology where we have had some success and in space systems, an important development. In systems integration also we have made some progress, and in broad band ISDN we have, I think, one of the leading positions in developing on that migration path which goes from narrow band to broad band. To take these four areas as examples, cellular was new for us, space systems was a new technology, systems integration meant developing new capabilities and broad band ISDN employs new networks and new approaches to the use of technology.
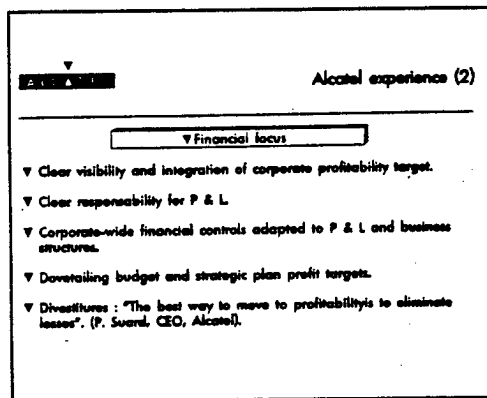
The financial focus was important as well. We have been able to develop a very clear vision within the company of the profitability targets at all levels of Alcatel. We have tried very hard to pursue the clear definition of responsibility for profit and loss. We have implemented financial control structures adapted to profit and loss and business structures - in other words, putting together the profit and loss responsibility which is necessary in a country and dovetails with the profit and loss responsibility of the business on an international basis. I think in that we have been able to put together the best of ITT, which had very heavy financial controls, and CGE which had much lighter financial controls, but in CGE you had better make your budget or you are in trouble.

On divestiture, I want to quote our chief executive officer, who once said:

> "The best way to move to profitability is to eliminate losses."
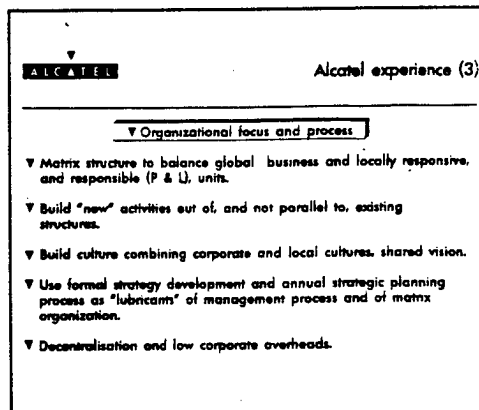
We did that very quickly with a number of divestitures that we made.

Last but not least is our organisational focus. We have tried in our organisation to foster a matrix structure which balances global business responsibility and locally responsive and responsible profit and loss units. It is not easy to put together. I do not know how many of you have lived in matrix structures, but it is a nice concept, very difficult to live with, but necessary in our kind of global business.

We have also been very careful to build the new activities out of and not parallel to existing structures. We have tried to avoid creating diversified structures and project structures which had no fatherhood within the organisation. We feel that when you build new businesses and approach new market segments, it is good for that sort of activity to have a godfather within the organisation that has some management clout and some resources to help you. As I said earlier, that corporate culture combines the corporate and the local cultures. We try to make sure that our German managers in Alcatel SEL in Germany have a German culture plus an Alcatel culture and not one or the other mutually exclusively.

We also use formal strategy development and an annual strategic planning process as what I would call "lubricants" to make the management process work and to make the matrix organisation work. We have also decentralised considerably. The corporate staff in Alcatel for a company of our size is only 150 people.

So today how do we stand? Our annual sales this year will be well in excess of 12 billion Ecus. We have 125,000 employees, probably a little fewer now. We are number one in Europe in our four main business areas, number two worldwide supplier of communication products and systems, number one in switching and in cables and we also have some very strong companies outside Europe in Australia, Asia and a high share of export markets. As

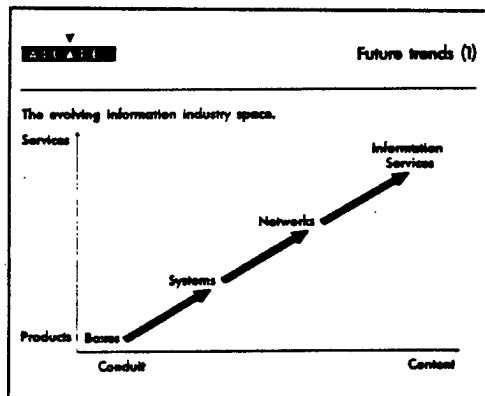those of you who read the financial press or are industry analysts know, our profitability level has come up gradually but quickly to the best industry levels. We are also playing a leading role in European research such as RACE and Esprit.

Let me move on to some of the future trends for our industry. A model was developed by people in Harvard to try to plot the information technology industry - you probably all know it - and it tends to plot the industry along two parameters: products/services and conduit/content. The traditional telecommunication equipment manufacturers were perhaps largely centred in the bottom left of that space, products and conduit, the transport mechanism, products for the transport mechanism.

As I said earlier, what has happened over the past few years and will increasingly happen is that we are forced more and more to develop ourselves along the product to service parameter - more and more software and service - and also, as we integrate more and more functionality in our products, to move a little bit along the conduit to content area. But of course, as you go all the way up that spectrum, you move from boxes to systems to networks to information services, and one of the questions about our industry is how far will the large players go in that area. As I said earlier, some telecommunication equipment companies have already tried or are trying to go all the way up towards the network building, network operating and information services area. As we saw today, it is a

very moving domain, and I think one should be very prudent. What is certain is that companies like ourselves must be able very quickly to provide not only the boxes but also the systems, the software and the network integration which is necessary. Beyond that the facilities management question and the operating question is very open and will be dependent on a whole number of factors which have been spoken about today.

Another question is what we call the datacom-telecom debate. The temptation here is to say that it is all digital technology so logically datacom and telecom will come together. In the past two years we have just been through the end of a first wave of attempted cross-penetration with telecom hardware people getting into datacom hardware and vice versa, and everybody has come out, the most recent being IBM when it sold Rolm. That is one wave, and I think it is now over. However, what is certain is that within each of those industries, the datacom industry and the telecom industry, we will continue to have concentration. We read it every day in the press about the datacom industry, and I think we saw earlier on from the industry structure that we have in telecom and from the kind of trends and impacts on our industry that further concentration is virtually inevitable. But that is within the two industries.

Another factor which is sure is that there are growing interfaces between datacom and telecom, joint voice data networks. Whether they be at the local level or the wide area level, there are more and more interfaces between datacom and telecom. I cease to be able to count the number of connectivity agreements that Alcatel has with hardware suppliers. But the next wave will probably be much more complex than the last. In this wave, the telecom equipment people, computer hardware people, software houses, systems integrators - of which there are very few in Europe today but there are some Americans - and operators will come together to try and find out how to do business in the telecom space of the late 1990s. Already today there are operators who are equipment and systems integrators, systems integrators who are operators, and equipment manufacturers who are going into operating. There are already software people trying to get into systems integration and operating, and, as I said before, equipment manufacturers are increasingly systems integrators.

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Perhaps I can leave you with a question. When in the future microelectronics, software, network building, distribution and service will be the critical components of a truly global business, who will be the winners? I hope that I have suggested who might be the winners: the companies which face up to some of the challenges which I have mentioned. We at Alcatel are ready to face up to those challenges and we realise how difficult some of them are. I should like to leave you with two expressions of hope, two hopes that we have which are contextual factors which we think will be important for the future. One of them concerns customer premises equipment. The contextual factor which will be fundamental for our industry in customer premises equipment is fair reciprocal trade. It has been said today and we believe very strongly in fair reciprocal trade. We hope that Europe will go that way. After that it is a question of innovativeness and entrepreneurship to win the battles in a global business.

Concerning networks. I would with all due respect tend to disagree with some of Mr Sike's remarks earlier on. Given that our competitors in this global business are very often subsidiaries, divisions or part of the family of operating companies, given also that networks require software, service and customisation, given that we are not talking in networks about off-the-shelf products, we do not feel that the ultra liberal approach to telecom equipment for networks is the best one. We feel that much of the past success of European industry at a national level has been due to the co-operation that has been enabled between network operators and telecom network equipment suppliers. We feel that that past experience and success is one of the advantages of Europe and one of the challenges and hopes that we have is that we can find new modes to develop that on a European level, where equipment suppliers and operators can co-operate to build the telecom networks we need for the next century.

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PROSPECTS FOR JOINT VENTURES WITH EASTERN EUROPE

Mr Seppo Ahonen
Executive President, Nokia Cables and Machinery Group
Member of the Board, Nokia Corporation

When I speak of Eastern Europe, I mainly imply the Soviet Union. It is with the Soviets that we at Nokia have gained the majority of our experience in trading with the Comecon countries.

This is reflected in the trade that the OECD countries conduct with the Eastern Bloc, with over 40% of it accounted for by the Soviet Union.

On the óther hand, would the current economic turbulence in the communist countries have been possible without the Soviet Union's glasnost and perestroika?

For the purpose of this review, I shall concentrate on certain questions we have been faced with, but which may not strictly accord with the title of this subject. I shall attempt to answer such questions as:

- Why are joint ventures wanted?

- What kind of problems occur in negotiations?

- What are the biggest risks?

- Why do joint ventures fail?

By way of example, I can draw on the experience gained by the Nokia Group through co-operating on joint ventures in Eastern Europe.

In that this conference is convened to examine matters from the point of view of telecommunications, it would be pertinent to outline Nokia's activities in this area.

Nokia Cables and Machinery in the telecommunication business

Nokia Cables and Machinery forms part of the Nokia Group and is active in three business sectors - namely, cable production, the manufacture of cable machinery, and electrical wholesale.

Nokia Cables' turnover is about 600 million US dollars. These figures do not take into account our latest acquisition in the Netherlands of the majority of the shares of NKF holding company.

As a matter of fact, Nokia Cables is the fifth largest cable producer in Europe, with production capacity in Finland, West Germany, Turkey and Holland.

It may be worth mentioning that Nokia-Maillefer is the world's leading manufacturer of cable machinery. This means a very strong vertical integration in cable manufacturing technology. And this is one reason for our co-operative efforts with Eastern Europe through joint ventures.

Nokia Cables
produces

- **Energy cables**
- **Telecommunication cables**
- **OEM cables**
- **Aluminium extrusions**
- **Capacitors**
- **Accessories**

Nokia Cables Net Sales in 1988 and 1989
(estimated)
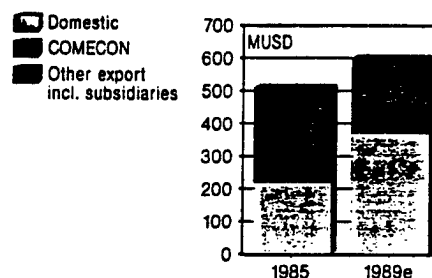
This picture shows that our results are not dependent on sales to Comecon countries, it counts for only 10% of the net sales. Our main markets lie in the West. However, we have been supplying telecommunication cables' and equipment to the Soviet Union for 42 years. So we can claim that we know the market at least to a certain extent.

Or do we?

The Major Trading Partners of the COMECON Countries

		1987 billion USD	1988 billion USD
1.	West Germany	17 267	18 793
2.	Italy	5 020	5 207
3.	USA	2 656	4 177
4.	Japan	3 386	4 026
5.	France	3 646	3 960
6.	Finland	3 492	3 619
7.	Austria	2 976	3 458
8.	United Kingdom	2 159 ·	2 485
9.	Switzerland	1 767	2 003
10.	Netherlands	1 574	1 789

OECD,
Statistischer Bundesamt

Freeing political and market forces

Now, with Western Europe uniting and the Eastern Bloc freeing itself, the old map of Europe, with its traditional historical, economic and cultural connections, is being revealed once more from beneath the ideological and military overlay superimposed by the two great power alliances.

In the Soviet Union and the rest of the Eastern Bloc, the current reformation process across the spectrum of society will also change national attitudes towards foreign activities. The aim is to organise those countries' economies to embrace an expanding international division of labour. One concrete example of this development is the Soviet Union's revised legislation which allows joint ventures.

Foreign Debt of COMECON as at 1.1.1989

Country	Debt in billion USD
USSR	42
Poland	39
Yugoslavia	20
GDR	19
Hungary	17
Bulgaria	7
Czechoslovakia	7
Romania	3

Joint ventures are one remarkable manifestation of the process of economic development initiated by perestroika. The legislation supporting this move is new, as is the entire climate of activity within Soviet society. The natural result is a certain cautiousness among Western concerns towards the establishment of joint ventures. For example, until recently there was not any protection for foreign investments in the Soviet Union. However, Finland

signed the Foreign Investment Protection Agreement with USSR last February. After that a few other Western countries have done the same. Hungary and Poland concluded the same kind of agreements earlier already. These agreements are essential preconditions when establishing joint ventures.

The biggest threat to Eastern Europe's reformation stems from the slow or non-existing economic growth. Allowing political freedom is not enough to meet a consumer pressure that has been building up for decades.

This has pushed the whole of Eastern Europe into a search for new economic solutions. Should the desired political freedoms not materialise, nor the basic consumer needs be fulfilled, the risk facing Eastern Europe is of a population depletion.

Now it is up to the Western democracies to give real support to the Eastern Bloc which is now on the road that the Western countries have been luring them to for half a century. This will best be achieved by channelling the flow of capital into investment in Eastern Europe. Joint ventures represent one such channel. Equally important is that wealthy Western countries will facilitate market access to the products manufactured in the Eastern countries. Also by creating capacity for the manufacture of consumer and capital goods for the Eastern market, the region's political pressures can be eased. It is just as essential to encourage industry in co-operative efforts designed to produce goods that will generate a flow of currency from west to east.

Trade Between the OECD and Comecon Countries 1988

	OECD exports	OECD imports	Trade balance
Bulgaria	2 436	780	-1656
Czechoslovakia	3 588	3 804	+216
GDR	7 083	6 614	-469
Yugoslavia	8 856	9 228	+372
Poland	4 968	5 652	+684
Romania	1 284	4 056	+2 772
USSR	24 803	23 664	-1 140
Hungary	4 008	4 116	+108
Total, million USD	57 027	57 914	+887

This requires a certain approach on the part of companies involved in such a development: not just a careful analysis of the likely profitability and risks but a brisk enterprising, co-operative and pioneering spirit. It matches our own idealism to believe that glasnost will succeed. However, even if the Eastern Bloc's political direction were to make a full about-turn, foreign trade operations would still be needed.

Certain other macro-economic phenomena have occurred in Eastern Europe to support this development. For example, a certain potential for re-orientating export

capacity from Eastern to Western markets has arisen recently, and is expected to increase over a period of several years. The potential stems from the reversal of the decade-long rise in intra-Comecon oil prices - with the result that Eastern Europe's terms of trade with the Soviet Union have improved. Hence, the Eastern European countries no longer need to increase the quantity of exports to the Soviet Union to meet what has been a rising import bill. Instead, they can allocate increments in national output for domestic and/or other markets.

To accelerate this process, on 12th November 1989 Estonia announced the launch of its own convertible currency. I have often told my Estonian friends that I will start doing business with them only when they have a convertible estee kroon. This allows for the repatriation of profits. Most of the proposals from Estonia on joint ventures involve exporting commodities to Eastern markets, mainly to the rest of the USSR. However, this notion is not compatible with the use of an independent convertible. I can hardly see the Soviet Union standing by to watch this progress. Rather, it will impose barriers on such activities by restricting imports. The same goes for the rest of the Baltic countries.

Joint venture partners

Prior to 1987, it was not possible to find the right synergy for co-operation between Western and Soviet concerns in the form of joint ventures in the USSR. In Yugoslavia this was allowed in 1967 already, and in Hungary in 1972.

New legislation opened up entirely new vistas and methods of approach to the Soviet market. Totally new opportunities and market potential were born, and the hope in the USSR was that Western companies, too, would exploit them.

Under Soviet law, joint ventures are legal entities that come under the USSR's jurisprudence. Joint ventures may be owned by a combination of Soviet and foreign partners. But as no statute of limited liability exists in the Soviet Union, a joint venture trades more in the manner of a partnership.

Legislation governing joint ventures in the Soviet Union was passed on 13th January 1987. Modifications and improvements to those statutes have since been made. The aim has been to make joint venture legislation more attractive to both partners. This year, too, has witnessed new legislation in this respect, with the emphasis on the exact share of the capital and the division of ownership a matter for the partners to decide. This means that the foreign partner is now permitted to own more than 50% of the capital instead of the former 49% limit.

This is a significant change in that, within the very fortress of socialism, manufacturing capacity can be owned by foreigners. And yet another significant easing of restrictions allows for a foreign citizen to hold the position of chairman of the board or general director of the joint venture.

Obviously these derestrictions are based on practical experience. During the negotiations in our joint venture,

we noticed that some of the requirements we pointed out were taken as such into the Soviet legislation, too.

Hovering in the background here is the fact that the speed at which joint ventures are being established - and there must be about a thousand of them by now - is not sufficient to satisfy perestroika. What is more, legislation on joint ventures in other Eastern European countries, especially Hungary, is remarkably more liberal than that of the Soviet Union. And it has signposted a much faster road to economic reform.

Legislative revision is a clear signal to Western companies that the present Soviet administration will improve the position of joint ventures. There is much to be done. Even now, a joint venture may not operate in the Soviet Union in the distribution of goods and services - for example, as an agent. This is especially viewed amongst the Western business fraternity as a disadvantage. So a change is required here. But all reforms create, at the same time, a turbulence that can cause great problems and misunderstanding on both sides.

The legislative environment in which joint ventures operate has not as yet matured. But it is working, and already provides a framework within which one can function.

Joint venture motives

The establishment of a joint venture requires at least three parties: the Western concern, an Eastern European concern managed by the state, and a state department. Each has its individual reasons for desiring co-operation in the form of a joint venture.

In theory at least, joint ventures could purchase raw materials and components in the Soviet market at prices that are below those of market economy countries. However, the Soviets have indicated that their raw material and component price levels should be linked with those of the world markets.

From the point of view of a foreign partner who is aiming to sell the products of a joint venture on the Eastern market, it is essential that the costs of raw materials do not exceed Eastern price levels. Otherwise, in the long run, they lose in competition to their local rivals. Just as desirable should be to buy materials with local roubles.

Labour-intensive industries, especially, would benefit - at least many specialists say so - significantly from setting up house in a country where the workforce is well educated - or motivated towards self-development through study - and where wages are low.

However, personally I am convinced that a foreign company aiming at joint ventures with the only motive one of getting a cheap labour force should take another look at its feasibility study. It would soon learn that in the Soviet Union all companies, including joint ventures, are not just responsible for paying salaries. They may be responsible for social activities which in the West are normally taken care of by society itself - like organising schools, kindergartens, shops, transportation, holiday

resorts, health care, and so on. After devaluation of the tourist rouble the situation is completely new and unpredictable.

Goods produced through joint ventures would have an enormous, ready, all-absorbing market in the Soviet Union itself and in the surrounding Comecon countries. However, the repatriation of profits will be possible only if the dream of a convertible rouble comes true.

From the Soviet partner's point of view, the desirable goals are combined with acquiring Western technology and know-how. The part of production is aimed at Western markets in order to get hard currency. These are the goals of the government, too. In addition, there is always the desire to shrink imports from the West by creating the industries which produce substitutes for imported goods.

Conversely, the joint venture that needs large material investments from the West, or requires supplies to maintain production, has a need to export at least a part of the production to the West. Convertible currency is needed for these investments. The legislation in the Soviet Union states that all Western purchases of joint ventures shall be paid for by cash flow from exports.

Statistics show that the existing joint ventures in Eastern Europe were all established within a relatively short period. But an even larger number of joint ventures never saw the light of day. Even while such an enterprise might be founded on realistic opportunities, the process of negotiation does not always lead to the establishment of a joint venture.

A company that is trying for the first time to expand into the Soviet market has, in most cases, to face a number of difficulties - such as:

- a way of thinking dissimilar to that of materialistic cultures

- a different industrial infrastructure and economic environment

- a different and, for most Westerners, opaque decision-making system

- poor and often inefficient management of state-run industrial agencies and enterprises

- poor or non-existent exchange of information between the Soviet parties involved in the process of buying and implementing the purchased products.

Very often, the reason for this is not only a lack of cultural understanding but a misunderstood process of negotiation. We have grown used to starting the concluding negotiations on the final content of the plan only after the letter of intent has been signed. But on the contrary, the substance of the plan should be negotiated and finalised first, followed by the letter of intent. If the letter of intent has been signed before the actual agreement is finalised, this results in a negative feedback to the market. That is why, in spite of any objections, any problems must first be resolved in one's own mind.

Nokia's joint ventures in Eastern Europe

ELKAT

Nokia has 77 years' experience of cable manufacture. Copper remains the essential raw material in cable-making even today, despite the fact that optical fibres are conquering the field. Copper wire will be needed into the twenty-first century, both for power and telephone cable manufacture.

The copper wire rolling-mill in Helsinki, built 30 years ago, was in urgent need of modernisation. Ever since joint ventures were made possible in the Soviet Union, we have been examining the alternative of manufacturing copper wire as close to the sources of raw material as possible. Our other option was further investment in Finland, where there already existed a lack of available labour in the heavy metal industries.

Elkat

Joint venture
Moskabelj   60%
Nokia Cables   40%

Production
copper rods   100,000 tonnes p.a.

Estimated net sales p.a.
over 300 million USD

Finally, after negotiations lasting 22 months, on 5th September 1988 we set the seal on an agreement with our Soviet partners to establish a factory in Moscow. A company trading under the name of ELKAT, 40% owned by Nokia and the rest by Moskabelj, laid the foundation stone for a new factory on 28th November 1989.

ELKAT produces 100,000 tonnes of copper wire a year. This is the amount of raw material guaranteed for the company's use in the decade to come, at a reasonable price level, by the Soviet Ministry of Non-Ferrous Metals.

The factory's production capacity can be extended to 150,000 tonnes if sufficient raw material can be made available - and we believe it can. Measured in terms of today's raw material prices, the annual turnover is over 300 million US dollars. The production machinery is being supplied by Southwire of the United States. The factory is highly automated and will employ 70 people, with two foreigners working in company management.

Even though Nokia is Europe's fifth largest cable manufacturer, our own need is for 25,000 tonnes of copper a year. ELKAT will be able to supply part of our needs in the future. On top of this, Nokia has undertaken to sell at

least 5,000 tonnes of copper to the West, including Finland. It is of note that this amount is enough to more than cover the interest on foreign loans, to amortise the capital cost, to pay a dividend and meet other Western currency expenses. In return, the Soviet Union has made a commitment to purchase any copper that Nokia, for one reason or another, does not buy.

In our case, financing was not a problem. Once agreement had been reached on the feasibility study, we received several financing offers. The joint venture's loans guarantor is the Soviet Ministry of Electrotechnical Industry.

Within international banking circles, the credit-worthiness of the Soviet Union is rather high.

Ranking of Credit - Worthiness Among COMECON Countries

1. USSR	A
2. GDR	B+
3. Czechoslovakia	B
4. Bulgaria	B
5. Hungary	B-
6. Romania	C+
7. Poland	C
8. Yugoslavia	C-

Once we have advanced to this point, all else seems plain sailing. The negotiating process was, for us, and I am sure for the Soviets also, a process of learning. I would like to draw certain comments from our experience.

- Undertaking a feasibility study is essential for the Western partner. It is important that all parties are involved in the study: the Western partner, the Soviet partner and the state officials. The study stipulates certain of the fringe conditions needed to be met before the joint venture can be justified. In Nokia's case, the study included a guarantee of copper supply and purchase price levels by pegging the conversion price of copper cathodes to rods for 10 years. Given that we were unable to foresee movements in production costs, this was essential.

- A feasibility study must always form part of the final agreement. That being the case, were the laws determining the limits of operation of the joint venture to change, the way would remain open for further negotiations and a re-examination of the agreement.

- In Nokia's experience, the Soviet party had no leader capable of a full understanding of Western companies' methodology.

Incidentally, in Finland we are at present organising training courses in basic marketing economics. It is important to note that the Soviet Union uses not one

system of accountancy that would satisfy a joint venture's book-keeping requirements. Such systems have to be imported from the West and taught to the other party. Soviet accountancy systems cannot, as they stand, be used by a joint venture concern. For this reason, we have initiated a system based on the IAS.

AMT

AMT

Joint venture

Moscow Telephone company 60 %
Nokia Telecommunications 40 %

Mobile telephone network for Moscow city

Services offered mainly to diplomatic corps and foreign companies

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Besides ELKAT, Nokia Telecommunications of Finland and the Soviet Union's Moscow Telephone Company have established a joint venture company, AMT. The company will provide mobile radio telephone services in the Moscow city area. At the first stage the company, in which Nokia has a 40% share and Moscow Telephone Company 60%, will supply its services primarily to international companies and diplomatic missions in the Soviet capital. The company will also offer maintenance and installation services for the equipment delivered by Nokia.

Nokia Telecommunications will deliver both the network infrastructure and end-user equipment. Offering ease of use of automatic mobile systems, the Moscow network provides complete coverage of the city area, together with connections to the fixed network and to the international telephone system. We are confident that this mobile telephone network will make the life of foreign companies easier in Moscow.

Construction of the mobile network is under way now, with the first subscribers due for connection early in 1990. At the second stage, the company will install a paging system and provide other modern speech and data transmission services.

For Nokia Telecommunications, the joint venture marks the company's entry into the service provision sector.

Final comments

As this conference concentrates on telecommunications affairs, it is worth bearing in mind that there are long

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traditions in the Comecon countries on electrical and telecommunications technology. We tend to forget some of their achievements.

For example, as early as 1900 a Russian, A S Popov, built a wireless radio connection from Russia to Finland. Hungary's Tivadar Puskas constructed a telephone exchange in 1892, and the Soviets were experimenting with television and radar before the Second World War.

The economic and managerial climate in the Comecon countries in latter times has not been nutritious enough to sponsor the fast product development essential for modern high technology. This is due to the fact that international contacts have been limited. There is a chronic lack of convertible currency and internal price levels have been distorted. Neither has the standardisation reached the level we are accustomed to in the West.

It has recently been admitted that the so-called "internal embargo" completely separating the rather advanced, R&D intensive military and aerospace industry from the civil industry sector has been even more efficient than the COCOM embargo. Therefore, the diffusion and spin-off effects of technological progress, regarded as normal in the West, have been prevented.

Technology remains one of the constraints on such a transformation. And certain high technologies are only available in the West, with exports to Eastern Europe perhaps subject to embargo.

The Soviet market, which is often described as "vast" or as having "great potential", has always been very interesting for most Western concerns. Big state-run companies and industrial amalgamations, with their large investment budgets, have caught the focus of interest of the Western suppliers of various investment goods. The centrally-planned economy has offered big projects accompanied, despite a firm desire to buy, by slow and not always efficient negotiation processes. But all this comes with almost no risk as far as payment is concerned.

Almost every businessman who travels to the Soviet Union is so inundated with proposals for creating a joint venture company - and from such a variety of quarters - that his head cannot keep from spinning. Of course, there are proposals that can be taken seriously, being based on economic realism and some kind of feasibility study.

However, independent of what the future holds in store for perestroika, whether it will win through totally or only partially, or be forgotten in a few years and condemned as a mistake, there is only one way for Western businesses willing to expand into the Soviet market: to be present now!

And it is better to keep in mind that now we are selling to several buyers instead of one. We fight for clients who are end users. Business is no longer collecting orders from central buyers. Therefore tell your best Western salesmen: Go East, young man! Go East!

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COMMON STANDARDS IN EUROPEAN TELECOMMUNICATIONS

Professor Diodato Gagliardi
Director
European Telecommunications Standard Institute (ETSI)

Why a public standard?

The area of telecommunications includes proprietary and public standards. Proprietary standards are, in the short run, fine for the proprietors, because it is possible to keep out the competitors. But the global economic activity does not take advantage of the proprietary standard: the small and medium-size manufacturers are penalised, and in the long run all the actors on the market suffer prejudice. On the contrary, public standardisation is the key for an open market and can assure a widest potential participation. On the other hand, a public standard is built with the ideas of all and, therefore can really represent the best in terms of necessities for the technology and the market.

At this stage, it can be worth considering that standardisation can be divided into two parts:

- mandatory technical regulations
- voluntary standards

In a climate of liberalisation and open market, it is tempting to make a large use of mandatory technical regulations in order to protect users and networks in ensuring a "minimum" quality.

As a matter of fact, this orientation can be considered as rather negative, because it reduces the competition on the market and restrains the use of new technologies.

In conclusion, the mandatory technical regulations might be limited to the fulfilling of essential conditions such as security, safety, interferences, etc. Against this background, it should be underlined that most standards worked out by standardisation bodies are "voluntary standards". The objective is to produce one voluntary standard per subject of study.

Some may argue that the competition between different technical standards can facilitate the opening of the market: the market itself, through the decisions of the consumers, will weed out the inappropriate standards. However, the experience shows that, in some cases, the winner is not the best. It appears, therefore, advantageous for the consumers to know that, for every product on the market, there exists only one voluntary standard with a good degree of quality, leaving open to the market competition a sufficient number of parameters.

Why European standards?

Three levels of standards can be considered:

- national standards
- regional standards
- worldwide standards

Research and development in the field of telecommunications call for very high and ever-increasing investments. As a consequence, larger and larger markets have to be aggregated in order not only to recover the expenses incurred in research and development but also to make profits. That is the reason why research is every day more European-oriented (EUREKA, ESPRIT, RACE Programmes, etc) with the aim of facilitating the rise of a large common market. Against this background, it is clear that the existence of national standards, often incompatible, is the major obstacle to the consolidation of an "open regional market" and to the offering of services absolutely compatible at European level.

The European Single Market which will be established by the end of 1992 implies the free movement of persons, goods, services and capital within the European countries. In this connection, the production of European standards is crucial: these standards must be the same standards in all the countries participating in the market.

In conclusion, the adoption of common standards in Europe, particularly in parallel with the development of digital networks and services, is vital for the following reasons:

- to facilitate the European interaction between the national networks and services

- to facilitate the portability of terminals, and more generally the European market in the field of telecommunications

- to strengthen the position of the European telecommunications operators on the world scene.

Obviously, at this stage, it should be worth asking the question whether "regional standards" could not be an obstacle to "worldwide standards", which are certainly the best solution. All the parties in the field of telecommunications in Europe are unanimous to recognise that worldwide standards are the final prize but the time schedules for completing worldwide standards are in general very long. A minimum of four years is necessary for subjects already set in an existing general frame and a maximum of 12 years is required for subjects for which a frame does not already exist and which must therefore necessitate a preliminary study. This inertia in the standards business is clearly connected with the big delays necessary for the consensus building at different levels and with differently prepared solutions.

Often, operators, manufacturers and users are not in a position to wait. As a consequence, "industrial proprietary standards" and/or "provisional national standards" can be

built in many countries. National and proprietary standards, particularly if consolidated, delay the adoption of standards with "one solution only" and the consensus building.

With reference to the European situation, the consolidation of national standards, frequently incompatible, is very dangerous if we take into account the necessities for services absolutely compatible at the European level and the goal of a widely open European market. In effect, we must consider the ever-increasing demand for fully operational telecommunications services across the boundaries. Moreover, from the industrial standpoint, no single European country has a market large enough to support the high cost of research and development nowadays necessary.

Against this background, the "European standardisation" must be considered as a useful intermediary way between national standards and worldwide standards: the aim of "European standardisation" is to avoid consolidating provisional national standards through the building-up of a co-ordinated European solution which could be:

● offered as a European contribution to the worldwide standardisation body

● adopted as a European standard.

The first alternative might be used when the adoption of the worldwide standard is about to be made or when a delay is acceptable. The second alternative might be used when the adoption of the worldwide standard appears to take a long time and when delays are unacceptable. Naturally, the choice of the solution is a delicate matter. It must be correctly established on the basis of valid commercial reasons, in the field of the market of equipments and/or services.

But there is also another possible case in which the intermediate level of "European standardisation" can be considered particularly positive. When a worldwide standard exists, the national standard will be an implementation of the worldwide standard. But, in many cases, worldwide standards contain many options which in practice do not make implementation mutually compatible.

Consequently, the aim of the intermediate level represented by the "European standardisation" is to adopt an option only for Europe and make sure that solutions are compatible in the different countries.

Therefore, it seems possible to conclude that the "European standardisation process" does not represent an obstacle or a reason of delay to the worldwide standardisation process. On the contrary, it constitutes a useful instrument for a speeding-up of the work at worldwide level.

On the other hand, the adoption of European solutions in disagreement with the worldwide solutions must be considered as impossible. In any case, it is fundamental to ensure that the emerging worldwide standards meet the European requirements and are such that they do not place European users, public operators, administrations and industries at a disadvantage.

In synthesis, the guidelines of the European standardisation process can be considered as follows:

● To prepare a common European position for the work in the worldwide standardisation bodies (CCITT, CCIR, IEC, ISO, etc) and to support in the aforementioned bodies the adopted European standards. As a matter of fact, on this matter, an evolving procedure can be foreseen in order to reduce every day more overlappings in the work and to lower the global cost of the standards.

● To complete the worldwide standards according to the European requirements, choosing in particular one option only.

● To anticipate, whenever useful and necessary, the worldwide activity, with the adoption of European standards.

The creation of ETSI

ETSI (European Telecommunications Standards Institute) is a new structure, created with the objective to give a strong impulse to the production of European standards in the telecommunications area. This structure can be considered as an open forum where the most skilled European experts can converge to work together to achieve the best possible technical results, and this independently of their belonging to one or another category: Administrations, Public Operators, Manufacturers, Users, Service Providers, Research Bodies can all be interested in establishing and implementing the adequate standards.

Naturally, as a consequence, the choice of the subject for the standardisation can be made carefully taking into account the interests and the necessities of all parties involved.

It was decided to create ETSI during a meeting of the PTT Directors-General of CEPT countries on 7 September 1987. On 15 January 1988, a Memorandum of Understanding for the creation of ETSI was approved. On the same day, it was decided that the headquarters of the Institute should be located in Sophia-Antipolis (Nice).

ETSI began to carry out its legal and administrative activity at the end of March 1988 with the first meeting of the ETSI General Assembly.

Technical activity in ETSI initiated in July 1988 as a consequence of the first meeting of the Technical Assembly.

The position of ETSI among the European Standards Bodies and, consequently, the status of the standards produced by ETSI are very well defined. ETSI is a European Standards Organisation operating in the field of telecommunications. Standards approved by ETSI are known as ETSs (European Telecommunications Standards) with the status of "voluntary standards". In some cases, the standards approved are "Interim European Telecommunications Standards" (I–ETSs): this designation will be adopted whenever a standard represents a provisional solution before a more advanced standard is produced or whenever a standard is immature and requires

some period of trial. The procedure for the adoption of an ETS or I-ETS is largely transparent: a public enquiry in the ETSI Member Countries and a subsequent weighted national voting are foreseen. The public enquiry is carried out by the recognised National Standards Organisations (NSOs) which are exclusively responsible for establishing the national position for the vote, the standstill and the transposition of ETSs in the countries concerned.

Therefore, the task of ETSI is to produce only "voluntary standards".

Consequently, the possible transformation of an ETS into a "mandatory technical regulation" can only be achieved outside ETSI through a "possible national action" or a "European adequate action" (f.i. a "Directive" of the European Communities).

Why ETSI?

The creation of ETSI appeared the best possible answer to the different strong pressures coming from the telecommunications area which continuous evolution is very quick, not only from the technical point of view but also from the significant legal, regulatory and commercial point of view.

The most qualifying points of ETSI

A   Members and geographical coverage

The cost of standardisation in the field of telecommunications is dreadfully elevated: the high cost appears inevitable due to the complexity of the problems and difficulties in reaching a large agreement of all the parties. These are the reasons why a common good will must be shown by all the actors in the process of standardisation and why they should be convinced that standards are an absolute necessity for them all.

With this view in mind, the following categories of members are entitled to join ETSI:

- national administrations
- public network operators
- manufacturers
- users (including private service providers offering services to the public)
- research bodies

So far, there are at present in ETSI 186 members representing the leading European telecommunications interests. The number of members will grow rapidly in the near future.

It should be noted that ETSI is the sole European Standardisation Body open to direct membership by individual national organisations. The individual members are entitled to take part in the technical discussion, to represent their own interest and to influence the ETSI decisions.

The geographical coverage of ETSI can have the same dimension as the CEPT coverage. So far, 21 countries are represented.

B   Fields of interest

The fields of interest can be divided into three parts:

- telecommunications
- information technology/telecommunications grey zone (cooperation with CEN/CENELEC)
- broadcasting/telecommunications grey zone (cooperation with EBU)

C   Working structure

The bodies involved in the preparation of standards are three:

- the Technical Assembly
- the Technical Committees
- the Sub-Technical Committees

- **The Technical Assembly** is the highest authority within the Institute for the production and approval of technical standards. It gives guidance on the work to be undertaken and indicates priorities. It sets the work programme of the Institute.

- **The Technical Committees** are composed of experts and can involve participants who are not members of the Institute. They provide a forum for consensus building on a draft standard to be submitted to the public enquiry and vote. Each Technical Committee meets periodically and is specialised in a definite area. It consists of European senior experts in their speciality. The Technical Committees are sub-divided into Sub-Technical Committees, which are responsible for preparing the proposed draft standards.

- **The Project Teams** are closed groups of experts carrying out studies and preparing urgent draft standards to be examined by the Technical Committees. Of course, the Project Teams are based in Sophia-Antipolis but, in some cases, elsewhere. Each Project Team works under the technical guidance of a Technical Committee. Technical Committees are entrusted with proposing the creation of new Project Teams and are responsible for drawing up their mandates. Technical Committees and Sub-Technical Committees hold their meetings in different parts of Europe, on the invitation of individual members.

Draft standards are first prepared by Sub-Technical Committees (or Project Teams) which are composed of experts specialised in the relevant area. Then the draft standard is discussed within the Technical Committee concerned: therefore the Technical Committee provides a forum for consensus building on a draft standard. The final stage in the preparation of standards is that of the public enquiry in the ETSI Member Countries and the formal vote. The public enquiry gives everybody in Europe the opportunity to express comments and proposals.

Only in some particular cases, draft standards will be sent to a worldwide public enquiry. In those cases, comments will come from all parts of the world. That is foreseen when a draft ETS is candidate to become a "mandatory technical regulation".

WORLD TELECOMMUNICATIONS

Of course, due consideration will be given to all the comments received from the public enquiry before a formal vote is taken in ETSI. Two possibilities of vote are foreseen: during a meeting of the Technical Assembly or by correspondence. In both cases, the procedure foreseen is that of a national weighted voting.

From the above description, it must be clear that the most efficient way for an individual member of influencing the technical choices in ETSI is through the participation of its experts in all the stages of the work.

The other important bodies of ETSI are:

- **The General Assembly** which is the governing body of ETSI. It determines the policy of ETSI, adopts the budget and approves the audited accounts. All members are entitled to attend its meetings.

- **The ETSI Secretariat**, which is constituted by a very small number of people and headed by a Director and a Deputy-Director, is a permanent operating body responsible for the co-ordination of the technical activity, the financial and administrative management and, more generally, the implementation of all the decisions taken by the two Assemblies.

The technical activity in ETSI

The technical activity of ETSI can be divided into three parts:

- One part carried out directly by the Technical Committee, which does not involve expense from ETSI. This part is the largest one and involves a very high number of experts. This part of activity includes the production of draft ETSs or I–ETSs and of other official ETSI documents (Technical Reports).

- One part connected with the activities of Project Teams. The approval of this part requests unanimity in the Technical Assembly and involves expenses by all the members of ETSI. This part is strictly connected with the previous part and can be considered, from a technical point of view, as an appendix to the previous part.

- One part (voluntary programme) which involves only part of the ETSI Members or Counsellors in the technical activity and expenses.

  [The Counsellors of ETSI are the representatives of the Commission of the European Communities (EEC) and of the Secretariat of EFTA (European Free Trade Association).]

At present, the activity is divided into three sectors:

- **A legal sector**, relating to the problem of intellectual property rights, connected with the preparation and adaptation of the standards. One specific committee was created, with the acronym IPR.

- **A strategic sector**, to suggest the best future studies for ETSI, on the basis of technology and market developments. A particular committee, named SRC (Strategic Review Committee) was created to examine the different areas of technical activities in ETSI, as decided by the Technical Assembly. The composition and the chairman of SRC change depending on the area considered. For the time being, their activities are related to mobile services.

- **A technical sector**, relating to the normal activity connected with the preparation of the draft standards. This sector includes 12 Technical Committees. We must also note that a special temporary committee named ISM (ISDN Standards Management) was created with the objective of coordinating the different standards activity necessary for the development of ISDN in Europe, according to the approved Memorandum of Understanding on the matter.

Every year, the following documents are approved by the Technical Assembly:

- the multi-annual programme

- the annual programme

- the costed work programme

- the voluntary programme

The annual programme for 1989 foresees the preparation of about 50 draft standards for the end of the year and of about 33 official Technical Reports. The same programme for 1990 foresees about 185 draft standards and about 49 official Technical Reports. Among this great number of standards are included about 153 draft ETSs relating to the development of ISDN in Europe and about 15 Technical Reports connected with the digital cellular European mobile system GSM. For the time being 31 draft ETSs have been sent out for public enquiry and formal vote.

The costed work programme for 1989 foresaw 261 man-months, subdivided into 18 Project Teams. Among these 18 Project Teams, 6 have completed their work and 12 are now under way. Part of these Project Teams will continue their work in 1990. The costed work programme for 1990 foresees 294 man-months, subdivided into 12 Project Teams. This programme is now subjected to the approval of the budget by the General Assembly. The voluntary programme for 1989 is also under way: it includes four Project Teams for a total of 76 man-months. For 1990 the voluntary programme has not been completely finalised: four extra Project Teams are foreseen but the necessary manpower is still under examination.

– END –

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